

参考

VisFlow 错误!未找到引用源。

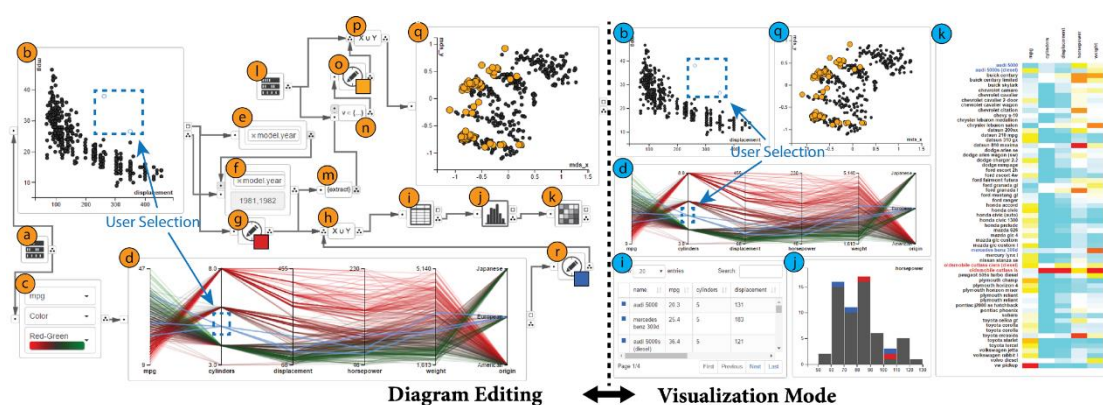
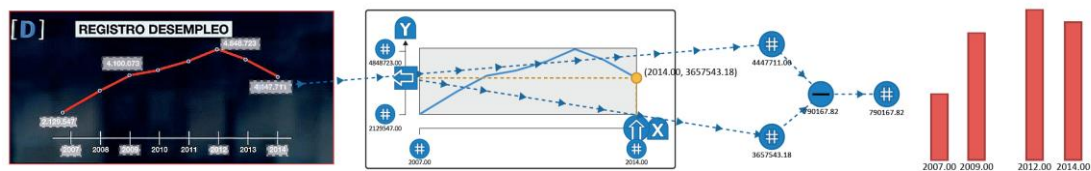


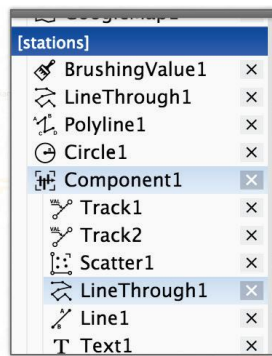
Fig. 1. An overview of VisFlow. The user edits the VisFlow data flow diagram that corresponds to an interactive visualization web application in the VisMode. The model years of the user selected outliers in the scatterplot (b) are used to find all car models designed in those years (1981, 1982), which form a subset S that is visualized in three metaphors: a table for displaying row details (i), a histogram for horsepower distribution (j) and a heatmap for multi-dimensional visualization (k). The selected outliers are highlighted in red in the downflow of (b). The user selection in the parallel coordinates are brushed in blue and unified with S to be shown in (i), (j), (k). A heterogeneous table that contains the MDS coordinates of the cars are loaded in (l) and visualized in the MDS plot (q), with S being visually linked in yellow color among the other cars.

主体为各个对象方块。对象方块可拖动和改变大小，可视结果方块可以进行框选。通过带箭头的折线连接其输入输出，输出包括两部分：全体和选中部分。可以自动 layout，可以选择隐藏所有数据和计算方块，仅保留可视结果。

与之类似的有 iVoLVER[5]



iVisDesigner[2]



iVisDesigner 有个简单的场景对象表达，使用文件目录的结构，可以进行点选。

VEGA[3] (论文配图)

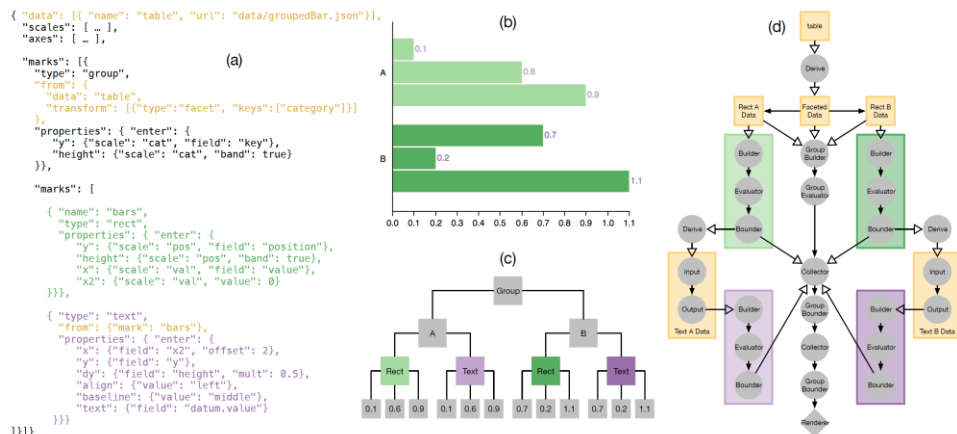


Fig. 4. (a) The specification for (b) a grouped bar chart, with (c) the underlying scene graph, and (d) corresponding portion of the dataflow graph.

VEGA 并不会把 scene graph 和 dataflow graph 显示出来，且相比之下重点在于 dataflow graph。

从上图的颜色对应可以看出来，VEGA 的代码本身也能一定程度上展现出 scene graph 和 dataflow graph。

原 VisComposer

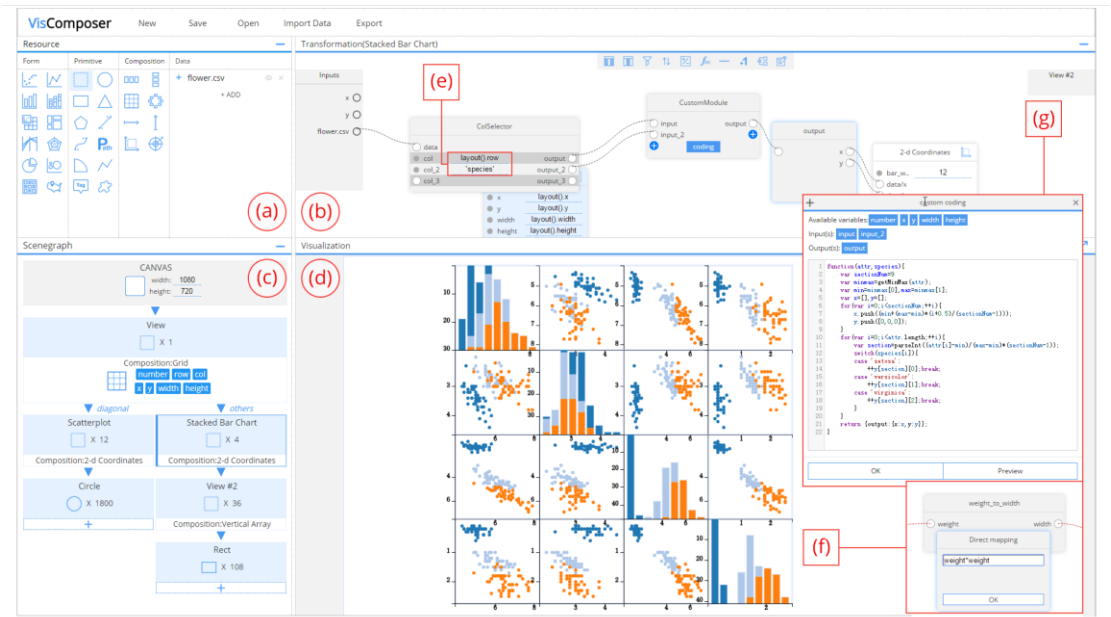
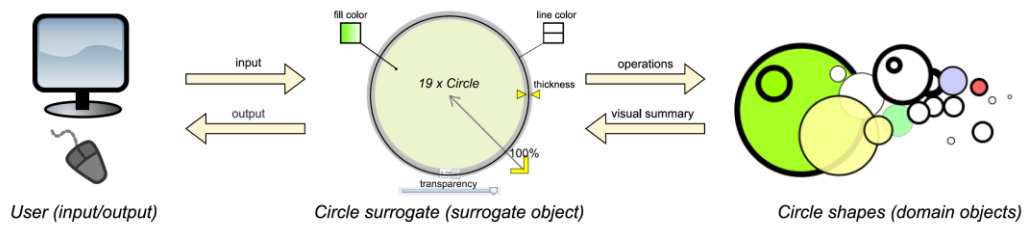


Fig. 5. The interface of VisComposer: (a) the resource view, (b) the transformation view, (c) the scenegraph view, (d) the visualization view, and (e) the code editor window of a custom transformation. The scatterplot matrix representation of Iris Flower Dataset is displayed.

简单的树状结构表达, 将同类型节点整合为一个并显示其类型和数量。附加了一些其他信息, 值得注意的是为了解决 scale (和坐标轴) 难于表达的问题添加了 composition 部分。

Surrogate Objects[4]



基于代理的设计模式。除了表达基本的图形类型信息外, 还将所有视觉编码通道全部表达了出来, 并且可以在代理图形上进行直接的操作(而非常规做法中的点选后在属性视图里进行)

设计需求 (待定)

需要展示的内容 (待定)

- 树的结构, 主要是视图上各个对象间的包含关系
- Dataflow

- 图形信息：类别、其他视觉通道
- Layout 信息
- 与结果视图的对应关系
- 与源数据的对应关系

需要提供的操作（待定）

- 添加/删除对象
- 移动对象
- 对象选择
- 视觉通道绑定
- 可视结果展示

设计美化（待定）

- 树状结构的表达方式

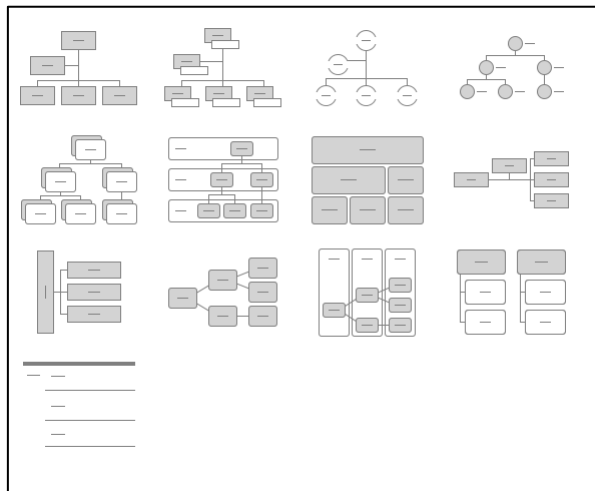


Fig. 1 MS Word 中 SmartArt 图形用于展示层次结构的各种形式

- 纵向
- 横向
- 文件目录
- Treemap
- 自由放置+自动化 layout（类似 VisFlow）
- 单例 or 多例
- 额外信息的展示方式

- 放置在节点内部
 - 可展开的节点
 - 线标记
 - 弹出窗口
 - 属性视图
- 自动 layout

引用

- [1] B. Yu and C. T. Silva, "VisFlow - Web-based Visualization Framework for Tabular Data with a Subset Flow Model," *IEEE TVCG*, vol. 23, no. 1, pp. 251–260, Jan. 2017.
- [2] D. Ren, T. Hollerer, and X. Yuan, "iVisDesigner: Expressive Interactive Design of Information Visualizations," *IEEE TVCG*, vol. 20, no. 12, pp. 2092–2101, Dec. 2014.
- [3] A. Satyanarayan, R. Russell, J. Hoffswell, and J. Heer, "Reactive Vega: A Streaming Dataflow Architecture for Declarative Interactive Visualization," *IEEE TVCG*, vol. 22, no. 1, pp. 659–668, 2016.
- [4] B. chul Kwon, W. Javed, N. Elmqvist, and J. S. Yi, "Direct Manipulation Through Surrogate Objects," *Proc. Int. Conf. Hum. Factors Comput. Syst.*, pp. 627–636, 2011.
- [5] G. G. Méndez, M. A. Nacenta, and S. Vandenheste, "iVoLVER: Interactive Visual Language for Visualization Extraction and Reconstruction," in *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems - CHI '16*, 2016, pp. 4073–4085.